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IN CONNECTION WITH AN ARTICLE BY V.A. YAVRUMOV AND  
N.M. ALEKSANDROV "POSSIBLE ERRORS IN COLI-TITER  
INVESTIGATION OF WATER BY THE MEMBRANE METHOD".

- USSR -

by T.L. Natanson

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N.M. ALEKSANDROV "POSSIBLE ERRORS IN COLI-TITER  
INVESTIGATION OF WATER BY THE MEMBRANE METHOD".

This is a translation of an article written by  
T.L. Natanson in Gigiyena i Sanitariya (Hygiene  
and Sanitation), Vol.24, No.3, Moscow, 1959,  
page 71.

From the Central Control and Research Laboratory of Industrial Trust for Donbass Water Supply.

A study of possible errors in determining the colititer of water by the membrane method was conducted by the Central Laboratory of the Industrial Trust for Donbass Water Supply (Donbassvodtrest) and two rayon laboratories (Stalinskiy and Slavyanskiy rayon administrations) on the basis of methods which the authors of this article proposed.

The laboratory of the Stalinskiy rayon administration performed 123 analyses of water from reservoirs of purified water with subsequent introduction of membranous filters in Eykman medium and its incubation for a period of 24 hours at 43°. Of 123 determinations three showed on Eykman medium; in one case in the form of a thick membrane on the surface of an almost translucent medium, but with no gas formation and in two cases with gas formation. The material from the two samples in which there was gas formation was further studied by sowing on Endo medium and it showed absence of growth in one dish while in the other there was growth of dry colonies which microscopically proved to be gram positive sporiform rods. Thus, the coli bacillus was not isolated in any of 123 determinations (analyses were performed by the technologist bacteriologist V.F. Borisova).

The laboratory of the Slavyanskiy rayon administration performed 254 analyses of water from head wells and from collecting reservoirs of these wells. On Eykman medium there was no gas formation in any of the 254 cases (the analyses were performed by the technologist bacteriologist V.A. Chupaylenko).

In the central laboratory of Donbassvodtrest 18 analyses were performed on various samples of water (from reservoirs of purified water, from the water line, etc.). Gas formation on Eykman medium was observed in a single case only (water from a 120-km-long water line), however, this material was not further investigated (analyses were performed by the microbiologist of the Central Laboratory T.L. Natanson).

Thus, of 395 analyses of non-contaminated water from surface and underground sources only three cases showed gas formation on Eykman medium in sowings carried out by the above-mentioned method. In two of these cases the isolated bacteria had no relation to the group of colon bacillus and one case was not studied in detail.

Even assuming that a colon bacillus had been isolated in the latter case, the error observed in the membrane method would represent only 0.25 percent.

We consider that a similar error can be observed in conducting analyses by any of the existing methods, and therefore changes in the methods of conducting analyses are not required.

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